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PATENT APPLICATION

ATTORNEY DOCKET NO. 10006387-1

IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Abel et al.

Confirmation No.: 2216

Application No.: 09/943,917

Examiner: Lett, Thomas J.

Filing Date: 08/31/2001

Group Art Unit: 2625

Title: A System And Method For Estimating Ink Usage Of A Print Job

Mail Stop Appeal Brief-Patents  
Commissioner For Patents  
PO Box 1450  
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on 07/29/06.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:

☐ 1st Month  
\$120

☐ 2nd Month  
\$450

☐ 3rd Month  
\$1020

☐ 4th Month  
\$1590

☐ The extension fee has already been filed in this application.

☒ (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 08-2025 the sum of \$ 500 . At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

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Respectfully submitted,

Abel et al.

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appl. No.	:09/943,917	)
Conf. No.	:2216	)
Appellant	:Abel et al.	)
Filed	:08/31/2001	)
Title	:A System And Method For Estimating Ink Usage Of A	)
	Print Job	)
TC / Art Unit	:2625	)
Examiner	:Lett, Thomas J.	)
Docket No.	:10006387-1	)
Customer No.	:022879	)

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

**APPELLANTS' APPEAL BRIEF**

Sir:

Appellants are appealing from the Final Rejection of claims 1-14 and 21-38 in an Office Action dated 03/29/2006 and maintained in an Advisory Action dated 06/29/2006.

**I. REAL PARTY IN INTEREST**

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holding, LLC.

## **II. RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interferences known to the real party in interest which will directly affect or be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

## **III. STATUS OF CLAIMS**

Claims 1-38 are pending. All of claims 1-38 stand finally rejected. The Appellants appeal the final rejection of claims 1-14 and 21-38.

## **IV. STATUS OF AMENDMENTS**

On 05/19/2006 a response after final rejection was filed that requested cancellation of claims 15-20, and requested reconsideration of claims 1-14 and 21-38. In an Advisory Action of 06/29/2006, the Examiner indicated that although the arguments in the response had been considered, the amendment canceling claims 15-20 would not be entered because the response raised new issues that would require further consideration and/or search.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

The claimed subject matter relates to the printing of print jobs, and more particularly to the determination of the sufficiency of the consumable resources, such as ink, of at least one printer to print the print job. Obtaining this information before the print job is printed advantageously avoids wasting print media and ink, as would occur if the print job were printed with inadequate visual quality due to the lack of sufficient consumables, thus requiring the resultant print output to be discarded. It also advantageously allows the necessary amounts of consumables to be obtained and on-hand at the time the print job is

printed.

In one embodiment, a method for estimating consumables requirements for a print job 304 (Fig. 3) provides printer parameters that are indicative of resources of a predetermined printer 100 (Fig. 1). The predetermined printer may alternatively be printer 302 (Fig. 3) or one of printers 322 (Fig. 3). The printer parameters typically include an available amount of consumables, such as the ink stored in printhead assemblies or cartridges 136 (Fig. 1) which is used to print the print job. The printer parameters may include ink cartridge ("pen") data 312 (Fig. 3). The print job 304 is originated at a first computer 202 (Fig. 3) at a first network node, and communicated to a second computer 212 (Fig. 3) at a second network node. At the second computer 212, the print job 304 is analyzed to determine print job parameters that affect a required amount of the consumables. In some embodiments, the print job parameters may be determined by a print job analyzer 310 (Fig. 3), a file data analyzer 332 (Fig. 3), or in part by both. Based on the print job parameters, the second computer 212 estimates the amount of the consumables that are required in order to print the print job 304. In some embodiments, the estimation may be performed by file data analyzer 332. The printhead temperature may affect ink usage in some embodiments, and so the estimating may include adjusting the required amount of the consumables based on the printhead temperature of the printer 100. Then, based on the printer parameters and the required amount of the consumables, a determination is made at the second computer 212 as to whether sufficient consumables exist to print the print job 304. In some embodiments, the determination may be performed by a supply analyzer 336 (Fig. 3). Subsequently, the determination is communicated from the second computer 212 to the first computer 202. In some embodiments, at least one alternative printer, such as at least one of printers 322, that has sufficient consumables to print the print job 304 may be identified at the second computer 212 and communicated to the first computer 202.

In another embodiment, a method for estimating ink usage of a print job 304 connects a computer peripheral device, which may be a printer 100, printer 302, or one of printers 322, to a host computer 212 having predefined information relating to the peripheral device. Then, before the print job 304 is performed, pricing and estimation of ink and image consumables

for completing the print job 304 using a plurality of different printers, including the computer peripheral device, is offered.

In still another embodiment, an ink usage monitoring system for estimating ink usage of a print job 304 includes a means for connecting a computer peripheral device, which may be a printer 100, a printer 302, or one of printers 322, to a host computer 212 having predefined information relating to the peripheral device. The system also includes a means for offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device before the print job 304 is performed. In some embodiments, the system may include means for determining printing parameters for choosing a print option that best fits budgetary and printing requirements of the print job 304. The structure corresponding to the connecting means is a digital internet workflow subsystem 340 (Fig. 3) and the Internet 208 (Figs. 2,3), or a communications link between the host 212 and the printers 322 of server 216 (Figs. 2,3). The structure corresponding to the offering means is one or more of the print job analyzer 310, pen data 312, file data analyzer 332, and supply analyzer 336. The structure corresponding to the determining means is a cost analyzer 334 (Fig. 3).

In a further embodiment, a method for analyzing ink usage for a printer 100 communicates a type of ink cartridge and ink reservoir system 136 to a host computer 212 as part of a print job 304 submission. Based on predefined printing requirements, the ink to be used in the print job 304 is estimated. The number of print swaths and pages that the ink cartridge 136 can complete, based on the ink available in the ink reservoir system, is then determined.

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 29-32 and 34-37 have been rejected under 35 USC §102(e), as being anticipated by U.S. patent 6,266,493 to Farrell et al. ("Farrell '493").

Claims 1-2, 6-9, 21-22, and 26 have been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 5,383,129 to Farrell et al. ("Farrell '129") in view of U.S.

patent 6,266,493 to Farrell et al. ("Farrell '493").

Claims 10-14 have been rejected under 35 USC §103(a), as being unpatentable over Hitachi Koki Imaging Solutions, Inc. (Office World News; Oct. 2000; vol. 28., issue 10; pgs. 30-31) ("HiKIS") in view of U.S. patent 6,266,493 to Farrell et al. ("Farrell '493").

Claims 3-5, 23-25, and 27-28 have been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 5,383,129 to Farrell et al. ("Farrell '129") in view of U.S. patent 6,757,070 to Lin et al. ("Lin").

Claims 33 and 38 have been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 6,266,493 to Farrell et al. ("Farrell '493") in view of U.S. patent 5,383,129 to Farrell et al. ("Farrell '129").

Claims 29-30 and 34-35 stand or fall together.

Claims 31-32 stand or fall together.

Claims 36-37 stand or fall together.

Claims 1-2, 6-9, 21-22, and 26 stand or fall together.

Claims 10-14 stand or fall together.

Claims 3-5 and 23-25 stand or fall together.

Claims 27-28 stand or fall together.

Claim 33 stands or falls alone.

Claim 38 stands or falls alone.

## **VII. ARGUMENT**

### **A. Claims 29-30 and 34-35 were improperly rejected under 35 U.S.C. §102(e) as being unpatentable over U.S. Patent No. 6,266,493 to Farrell et al. ("Farrell '493").**

As to a rejection under §102, "[a]nticipation is established only when a single prior art reference discloses expressly or under the principles of inherence, each and every element of

the claimed invention. " *RCA Corp. v. Applied Digital Data Systems, Inc.*, (1984, CAFC) 221 U.S.P.Q. 385. The standard for lack of novelty, that is for "anticipation," is one of strict identity. To anticipate a claim, a patent or a single prior art reference must contain all of the essential elements of the particular claims. *Schroeder v. Owens-Corning Fiberglass Corp.*, 514 F.2d 901, 185 U.S.P.Q. 723 (9th Cir. 1975); and *Cool-Fin Elecs. Corp. v. International Elec. Research Corp.*, 491 F.2d 660, 180 U.S.P.Q. 481 (9th Cir. 1974). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Appellants contend that claims 29-30 and 34-35 were improperly rejected because the single cited reference does not disclose all of the essential elements of the claims arranged as required by the claims and in as complete detail as in the claims.

1. The Farrell '493 reference does not disclose all the limitations of Appellants' independent claim 29 in that the limitation of "making a determination at the second computer whether sufficient consumables exist to print the print job" is absent from the reference.

Independent claim 29 recites:

"29. A method for estimating consumables requirements for a print job, comprising: providing printer parameters indicative of resources of a predetermined printer including an available amount of consumables; originating the print job at a first computer at a first network node; communicating the print job to a second computer at a second network node; at the second computer, analyzing the print job to determine print job parameters that affect a required amount of the consumables; based on the print job parameters, estimating at the second computer the required amount of the consumables required to print the print job; based on the printer parameters and the required amount of the consumables, making a determination at the second computer whether sufficient consumables exist to print the print job; and communicating the determination from the second computer to the first computer." (emphasis added)

The Farrell '493 reference is directed to a "printing machine that records information about resources expended to carry out a printing request. ... Subsequently, before carrying out another printing request, the printing machine uses the recorded information to make a prediction or estimate of resources required to carry out the printing request" (Abstract). The Office states that the Farrell '493 reference discloses the limitation recited in claim 29 of making a determination at the second computer, based on the printer parameters and the required amount of the consumables, whether sufficient consumables exist to print the print job (Final Office Action, p.3). Appellants respectfully disagree.

In order to determine whether sufficient consumables exist to print the print job, two different types of information are required. First, the consumable resources (such as ink, toner, print media, etc.) that are required to print the print job must be determined. As recited in claim 29, the print job is analyzed at the second computer to determine print job parameters that affect a required amount of the consumables, and then, based on the print job parameters, the required amount of the consumables required to print the print job is estimated at the second computer. Second, the amount of the consumable resources that are available to print the print job must be ascertained. As recited in claim 29, printer parameters indicative of resources of a predetermined printer, including an available amount of consumables, are provided. Finally, determining whether or not sufficient consumable resources exist to print the print job requires determining whether the available amount of consumable resources exceeds the required amount of consumable resources.

While the Farrell '493 reference may, arguendo, disclose estimating the consumable resources required to print the print job, it clearly does not disclose providing printer parameters indicative of resources including an available amount of consumables which are necessary for the consumable sufficiency. With regard to the limitation of providing such printer parameters, the Examiner states that "database 24 includes records 50 that contain data useful to estimate consumables required, col. 4, lines 5-17" (Final Office Action, p.3; emphasis added). The Farrell '493 reference discloses that an "estimation process 9 ... uses a record, selected by database reader 8, to estimate, or predict, consumable resources required to print a future job" (col. 4, lines 10-13). However, the Farrell '493 reference is silent as to

ascertaining the available amount of consumables (for example, in a particular printer or printing system). Because the estimation process 9 of estimator 10 of the Farrell '493 reference does not know the available amount of consumables, it cannot make a determination as to whether sufficient consumables exist to print the print job.

Accordingly, the novel features of the present invention are not anticipated by the Farrell '493 reference in that the above-discussed essential elements, arranged as required by the claims and recited in as complete detail as in the claim, are absent from the reference. Therefore, the rejection is improper at least for that reason and should be withdrawn.

**B. Claims 31-32 were improperly rejected under 35 U.S.C. §102(e) as being unpatentable over U.S. Patent No. 6,266,493 to Farrell et al. ("Farrell '493").**

1. The Farrell '493 reference does not disclose all the limitations of Appellants' dependent claims 31-32 in that the limitation of a "printhead temperature" is absent from the references.

With regard to a printhead temperature, claim 31 recites:

"31. The method of claim 30, wherein the printer parameters are further indicative of a printhead temperature of the predetermined printer." (emphasis added)

With regard to printhead temperature, claim 32 recites:

"32. The method of claim 31, wherein the printhead temperature affects ink usage, the estimating including adjusting the required amount of the consumables based on the printhead temperature." (emphasis added)

In rejecting claim 31, the Examiner does not cite any portion of the reference.

In rejecting claim 32, the Examiner cites a portion of the reference that merely discloses

"Subsequently, to estimate consumables needed for another print request, estimator 10 receives a desired quantity of the next print request, and processes data in a selected structure 50 to estimate a quantity of one or more resources needed to produce the next print request." (col. 6, lines 30-34).

It is clear that there is no disclosure of a printhead temperature of a printer, and to its effects on ink usage or the estimation process, in the above-cited portion of the Farrell '493

reference, or anywhere else in the Farrell '493 reference, which is completely silent as to printhead temperature.

Accordingly, the novel features of the present invention are not anticipated by the Farrell '493 reference in that the above-discussed essential elements, arranged as required by the claims and recited in as complete detail as in the claim, are absent from the reference. Therefore, the rejection is improper at least for that reason and should be withdrawn.

**C. Claims 36-37 were improperly rejected under 35 U.S.C. §102(e) as being unpatentable over U.S. Patent No. 6,266,493 to Farrell et al. ("Farrell '493").**

1. The Farrell '493 reference does not disclose all the limitations of Appellants' dependent claims 36-37 in that the limitation of an "alternative printer" is absent from the references.

With regard to an alternative printer, claim 36 recites:

"36. The method of claim 29, comprising:  
identifying at the second computer at least one alternative printer having sufficient consumables to print the print job, and communicating the identity of the at least one alternative printer to the first computer." (emphasis added)

With regard to alternative printers, claim 37 recites:

"37. The method of claim 36, comprising:  
at the first computer, selecting one of the alternative printers and sending the print job from the first computer to the alternative printer." (emphasis added)

In rejecting claim 36, the Examiner states that

"Examiner notes the printers 2 in the system 1 of Farrell et al send data to the Estimator 10. Farrell discloses that Estimator 10 may be located at printing systems 2 as well as user interface 12, col. 2, lines 37-39. All of these locations are different nodes. Thus, Estimator 10 can send data to an alternative node." (Final Office Action, p.5).

Appellants disagree with the Examiner's assertion that estimator 10 may be located at printing systems 2. There is no such teaching in the cited reference to this effect. In Fig. 1, estimator 10 is clearly illustrated as a different element from printing systems 2. What the Farrell '493 reference teaches is merely that estimator 10 can be invoked by a user at one of the printing systems 2, via a terminal on printing system 2 (col. 2, lines 29-38).

However, even assuming *arguendo* that the Examiner's assertion is correct, such alleged operation fails to disclose all the limitations of claim 36. It is not pertinent whether the Estimator 10 can be located at the various printing systems 2 or can send data to an alternative node, because there is no disclosure in the Farrell '493 reference that the estimator 10, or any other element, identifies an alternative printer (different from the predetermined printer) on which to print the print job.

In addition, and for similar reasons as have been discussed heretofore with regard to claim 29, the reference does not disclose determining whether any printer has sufficient consumables to print the print job.

With regard to the rejection of claim 37, it follows that, if no alternative printer is identified, no alternative printer can be selected or have a print job sent to it, as recited in claim 37.

Accordingly, the novel features of the present invention are not anticipated by the Farrell '493 reference in that the above-discussed essential elements, arranged as required by the claims and recited in as complete detail as in the claim, are absent from the reference. Therefore, the rejection is improper at least for that reason and should be withdrawn.

**D. Claims 1-2, 6-9, 21-22, and 26 were improperly rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,383,129 to Farrell et al. ("Farrell '129") in view of U.S. Patent No. 6,266,493 to Farrell et al. ("Farrell '493").**

As to a rejection under §103(a), the U.S. Patent and Trademark Office ("USPTO") has the burden under §103 to establish a *prima facie* case of obviousness by showing some objective teaching in the prior art or generally available knowledge of one of ordinary skill in the art that would lead that individual to the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Manual of Patent Examining Procedure (MPEP) section 2143 discusses the requirements of a *prima facie* case for obviousness. That section provides as follows:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must be found in the prior art, and not based on applicant's disclosure.

Appellants contend that claims 1-2, 6-9, 21-22, and 26 were improperly rejected because (1) the applied references, alone or in combination, do not teach or suggest all of Appellants' claim limitations; and (2) there is no suggestion or motivation to modify or combine reference teachings. Such could be possible only in hindsight and in light of Appellants' teachings.

1. The Farrell '129 and Farrell '493 references, alone or in combination, do not teach or suggest all the limitations of Appellants' independent claims 1 and 21 in that the limitation of "offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device" is absent from the references.

Independent claim 1 recites:

"1. A method for estimating ink usage of a print job, comprising:  
connecting a computer peripheral device to a host computer having predefined information relating to the peripheral device; and  
offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device, before the print job is performed." (emphasis added)

Independent claim 21 recites:

"21. An ink usage monitoring system for estimating ink usage of a print job, comprising:  
means for connecting a computer peripheral device to a host computer having predefined information relating to the peripheral device; and

means for offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device, before the print job is performed.” (emphasis added)

In rejecting claims 1 and 21, the Examiner states that:

“Farrell et al (‘129) does not expressly disclose using a plurality of different printers including the computer peripheral device.

Farrell et al (‘493) teach of the user of several (*four are shown in Fig. 2*) printing systems 2 (col. 2, line 40, and see Figs. 1 and 2) connected to a user terminal 12 and estimator 10 (computer peripheral device) for price and consumable estimation.” (Final Office Action, p.6; emphasis in original).

While Appellants agree with the Examiner’s admission that the Farrell ‘129 reference does not disclose this limitation, Appellants disagree with the Examiner’s characterization of the Farrell ‘493 reference. Although the Farrell ‘493 reference does disclose a plurality of printing systems 2 (e.g. in Fig. 2), it does not disclose that the estimator 10 offers pricing and estimation of consumables for completing the print job using a plurality of different printers including the computer peripheral device. Instead, the estimator 10 offers pricing and estimation of consumables for completing the print job using only a single one of the printing systems 2. As taught by the Farrell ‘493 reference,

“[d]atabase 24 includes multiple data structures 50 containing data about previous instances of print jobs. Estimator 10 ... constructs records 50 and writes records 50 into database 24, database reader 8 that reads records 50 and selects a record 50 according to criteria, and estimation process 9 that uses a record, selected by database reader 8, to estimate, or predict, consumable resources required to print a future job.” (col. 4, lines 5-13; emphasis added)

Accordingly, the Farrell ‘493 reference teaches that only one record 50, associated with only one printer, is used to estimate the consumable resources required to print the future print job. The use of only one record 50 is further emphasized by the flowcharts of Figs. 6A-C and Figs. 7A-C, according to which

“[e]stimator 10 deselects all remaining structures except one having the most recent time stamp (step 50), and uses the remaining structure 50 to estimate the consumables for the next job (step 55).” (col. 5, lines 4-7; also lines 29-32; emphasis added)

Thus, the single selected record 50 is associated with a particular “model identifier of the printing system 2 used in” printing the prior print job, and a particular “model instance identifier of the printing system used in” printing the print job (col. 4, lines 35-40). For

example, in the record 50 illustrated in Fig. 5, the model identifier indicates that an ACME printing system 2 was used to print the print job associated with record 50, and that the model instance identifier of the printing system 2 was printer ACME43. Accordingly, any estimate of consumables generated by estimator 10 is accurate only for a single printing system 2. For example, the estimate generated using record 50 as illustrated in Fig. 5 would be accurate only for the printing system 2 that corresponds to printer instance ACME43 of model ACME.

Furthermore, a complete construction of the limitation of claim 1 recites that the computer peripheral device itself may be used for completing the print job (i.e. printing the print job). As cited above, the Examiner equates the estimator 10 to the computer peripheral device. However, there is no teaching in the Farrell '493 reference that the estimator 10 can print the print job; as argued heretofore with regard to claim 37, the estimator 10 is a different element from printing systems 2. The Farrell '493 reference teaches that the print job may be printed only on a printing system 2.

Therefore, the features of the present invention are neither disclosed nor suggested by the Farrell '129 reference in combination with the Farrell '493 reference in that the combined references do not teach the limitation of offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device.

2. There is no suggestion or motivation to modify or combine reference teachings in that combining in the teachings of the Farrell '493 reference does not improve the estimation capability of the Farrell '129 reference.

The Examiner states that the motivation for combining the Farrell '129 and Farrell '493 references is "to improve the capability of estimation for networked machines" (Final Office Action, p.6). However, Appellants contend that no such improvement in estimation capability would result from combining the references. Accordingly, the stated motivation is merely a conclusory statement that is too vague and inaccurate to ascertain a motivation for validly combining the references.

The Farrell '129 reference is directed to a different objective than is the Farrell '493

reference. The Farrell '129 reference is directed to estimating costs for printing a print job that is supplied to a scanner in a hardcopy form, and in which the print job may be scanned so as to estimate consumable consumption (col. 8, line 52 – col. 9, line 6). Conversely, the Farrell '493 reference is directed to estimating costs for re-printing a previously-printed job that has been previously stored in the system in an electronic form (col. 1, lines 4-6, 17-21). As such, the cost estimation process is quite different between the two references. In the Farrell '129 reference, when a cost estimate is requested before even a single copy of the job has been printed (Fig. 10, step 510), the estimate must be based on image density and pixel counting of the print job, as determined from the output of the scanner (col. 8, line 52 – col. 9, line 6), rather than from actual print data for a previous printing operation.

Therefore, combining the teachings of the Farrell '493 reference does not improve the estimation capability of the Farrell '129 reference for a hardcopy print job. The records 50 (Fig. 5) of the Farrell '493 reference contain consumable information that is accurate only for the particular prior print job ID 52 ("Smith34") with which the record 50 is associated. While the information in a particular record 50 may be useful in accurately estimating the amount of consumables required to re-print additional copies of the prestored "Smith34" print job, it is essentially useless in estimating the amount of consumables required to print a completely different print job that corresponds to the hardcopy document that is loaded in the scanner of the Farrell '129 reference. Accordingly, contrary to the Examiner's assertion, combining the Farrell '129 and Farrell '493 references would not improve the capability of estimation. Furthermore, since the additional network components of the system of the Farrell '493 reference would add cost and complexity to the system of the Farrell '129 reference without providing any improvement in estimation capability, the Farrell '493 reference teaches away from such a combination.

Accordingly, there is no suggestion or motivation to modify or combine reference teachings. Any motivation to combine impermissibly uses the Appellants' disclosure as a blueprint or in hindsight.

**E. Claims 10-14 were improperly rejected under 35 U.S.C. §103(a) as being**

**unpatentable over Hitachi Koki Imaging Solutions, Inc. (Office World News; Oct. 2000; vol. 28., issue 10; pgs. 30-31) ("HiKIS") in view of U.S. patent 6,266,493 to Farrell et al. ("Farrell '493").**

Appellants contend that claims 10-14 were improperly rejected because (1) the applied references, alone or in combination, do not teach or suggest all of Appellants' claim limitations; and (2) there is no suggestion or motivation to modify or combine reference teachings. Such could be possible only in hindsight and in light of Appellants' teachings.

1. The cited references, alone or in combination, do not teach or suggest all the limitations of Appellants' independent claim 10 in that the limitation of "communicating a type of ink cartridge and ink reservoir system to a host computer as part of a print job submission" is absent from the references.

Independent claim 10 recites:

"10. A method for analyzing ink usage for a printer, comprising:  
communicating a type of ink cartridge and ink reservoir system to a host computer as part of a print job submission;

estimating the ink to be used in a print job based on predefined printing requirements;  
and

determining the number of print swaths and pages the ink cartridge can complete based on ink available in the ink reservoir system." (emphasis added)

Appellants disagree with the Examiner's assertion that the HiKIS and Farrell '493 references, taken in combination, teach or suggest all the limitations of claim 1. More specifically, the cited references do not teach and suggest the limitation of "communicating a type of ink cartridge and ink reservoir system to a host computer as part of a print job submission".

With regard to this limitation, the Examiner contends that "i-manage allows customers/users of a printing machine to check a printer's equipment including consumables such as an ink cartridge, para. 4" (Final Office Action, p.8). To whatever extent this may be true, however, there is no teaching or suggestion that such an equipment check is performed as part of a print job submission. Rather, it is performed using an i-manage software module

supplied by Hitachi, which a module that “provides comprehensive remote device management to allow dealers and customers to check a copier/printer’s status, including ... extensive usage statistics including page counts by media size and consumable usage” (HiKIS, para. 4). As such, the i-manage software module is a diagnostic and service tool. There is no disclosure of any aspect of i-manage that is associated with printing individual print jobs. Accordingly, to whatever extent the HiKIS reference teaches communicating a type of ink cartridge and ink reservoir system to a host computer, it does not teach that such communication is performed as part of a print job submission.

Furthermore, for similar reasons as explained heretofore with reference to claim 29, the Farrell ‘493 reference does not disclose communicating a type of ink cartridge and ink reservoir system to a host computer at all, much less as part of a print job submission.

Therefore, the features of the present invention are neither disclosed nor suggested by the HiKIS reference in combination with the Farrell ‘493 reference in that the combined references do not teach the limitation of “communicating a type of ink cartridge and ink reservoir system to a host computer as part of a print job submission”.

2. There is no suggestion or motivation to modify or combine reference teachings in that estimating the consumable quantities required to print a particular print job, as taught by the Farrell ‘493 reference, is unrelated to the monitoring function provided by the i-manage software of the HiKIS reference.

In addition, the Office has not established a *prima facie* case of obviousness at least because there is no suggestion or motivation to modify the reference or to combine reference teachings. The Office states that the motivation is “to estimate quantities prior to executing print jobs” (Final Office Action, p.9). Appellants respectfully believe that the stated motivation is merely a conclusory statement of generalized features and advantages which is too vague and not specific enough to ascertain a motivation for combining the references. As argued heretofore, the i-manage module of the HiKIS reference is not directed to estimation of the consumables needed for a particular print job, or even to individual print jobs at all. Rather,

the i-manage module provides a mechanism for remote device monitoring and management of copiers and printers. For example, a user may monitor consumables usage via the i-manage module, and then place a sales request for more consumables through the i-manage module at the appropriate time.

The Farrell '493 reference does not aid in the objectives of the HiKIS reference. Also as argued heretofore with regard to claim 29, the Farrell' 493 reference is directed merely to estimating the amount of consumables required to print a print job; it does not disclose ascertaining the amount of consumables available on a particular printer to print the print job, or determining whether the available amount of consumables is sufficient to print the print job. No linkage between required consumables and available consumables is taught or suggested by the HiKIS and Farrell '493 references; such is taught only by Appellants' disclosure. Therefore, a valid suggestion or motivation to combine is absent from the cited references. Any motivation to combine impermissibly uses Appellants' disclosure as a blueprint or in hindsight.

**F. Claims 3-5 and 23-25 were improperly rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,383,129 to Farrell et al. ("Farrell '129") in view of U.S. patent 6,757,070 to Lin et al. ("Lin").**

1. The rejection of dependent claims 3-5 and 23-25 is deficient on its face in that the dependent claims are not rejected based on at least all the references on which the base claims have been rejected.

"A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." (35 U.S.C. §112, paragraph 4.)

Claims 3-5 depend from base claim 1. Claims 23-25 depend from base claim 21. Both claims 1 and 21 have been rejected as unpatentable over the Farrell '129 and Farrell '493 references. In the rejection of claims 1 and 21, the Examiner admits that the limitation of "using a plurality of different printers including the computer peripheral device" is not disclosed by the Farrell '129 reference (Final Office Action, p.6). The Examiner cites the

Farrell '493 reference as allegedly teaching or suggesting this limitation. However, the Farrell '493 reference has not been cited by the Examiner in the rejection of dependent claims 3-5 and 23-25.

In the absence of conditions such as misjoinder or fundamental defects in the application (conditions which do not exist here), 37 C.F.R. §1.104(b) requires that the "examiner's action will be complete as to all matters". Here, the Examiner's action is not complete as to all matters in that it is deficient on its face, in not citing a specific teaching or suggestion in the Lin reference for a claim limitation that admittedly is not taught or suggested by the Farrell '129 reference. Appellants thus contend that the Examiner has not established a valid *prima facie* case of obviousness, and the rejection of claims 3-5 and 23-25 is improper at least for this reason.

2. The rejection of dependent claims 3-5 and 23-25 is improper in that the limitation of "using a plurality of different printers including the computer peripheral device" is neither taught nor suggested by the Farrell '129 and Lin references.

In the rejection of claims 1 and 21 the Examiner admits that the limitation of "using a plurality of different printers including the computer peripheral device" is not disclosed by the Farrell '129 reference (Final Office Action, p.6).

Nowhere in the rejections of claims 3-5 or 23-25 does the Examiner contend that this limitation is taught or suggested by the Lin reference.

Therefore, the rejection of claims 3-5 and 23-25 is improper at least because this limitation is neither taught nor suggested by the cited references.

3. The rejection of dependent claims 3-5 and 23-25 is improper for the same reasons that render the rejection of their base claims 1 or 21 improper.

Claims 3-5 and 23-25 depend from one of base claim 1 or 21, which have been rejected under §103(a) based on the Farrell '129 and '493 references.

Appellants have presented heretofore the reasons why the rejection of base claims 1 and 21 is improper.

Because the rejection of these base claims is improper, the rejection of their dependent claims 3-5 and 23-25 is also improper for at least the same reasons.

**G. Claims 27-28 were improperly rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,383,129 to Farrell et al. ("Farrell '129") in view of U.S. patent 6,757,070 to Lin et al. ("Lin").**

1. The rejection of dependent claims 27-28 is deficient on its face in that the dependent claims are not rejected based on at least all the references on which the base claims have been rejected.

"A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." (35 U.S.C. §112, paragraph 4.)

Claims 27-28 depend from base claim 1. Claim 1 has been rejected as unpatentable over the Farrell '129 and Farrell '493 references. In the rejection of claim 1, the Examiner admits that the limitation of "using a plurality of different printers including the computer peripheral device" is not disclosed by the Farrell '129 reference (Final Office Action, p.6). The Examiner cites the Farrell '493 reference as allegedly teaching or suggesting this limitation. However, the Farrell '493 reference has not been cited by the Examiner in the rejection of dependent claims 27-28.

In the absence of conditions such as misjoinder or fundamental defects in the application (conditions which do not exist here), 37 C.F.R. §1.104(b) requires that the "examiner's action will be complete as to all matters". Here, the Examiner's action is not complete as to all matters in that it is deficient on its face, in not citing a teaching or suggestion in the Lin reference for a claim limitation that admittedly is not taught or suggested by the Farrell '129 reference. Appellants thus contend that the Examiner has not established a valid *prima facie* case of obviousness, and the rejection of claims 27-28 is improper at least for this reason.

2. The rejection of dependent claims 27-28 is improper for the same reasons that render the rejection of its base claim 1 improper.

Claims 27-28 depend from base claim 1, which has been rejected under §103(a) based on the Farrell '129 and '493 references.

Appellants have presented heretofore the reasons why the rejection of base claim 1 is improper.

Because the rejection of this base claims is improper, the rejection of its dependent claims 27-28 is also improper for at least the same reasons.

**H. Claim 33 was improperly rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,266,493 to Farrell et al. ("Farrell '493") in view of U.S. patent 5,383,129 to Farrell et al. ("Farrell '129").**

1. The rejection of claim 33 is deficient on its face in that the rejection of claim 33 does not cite any alleged teachings of the Farrell '129 reference, but instead cites alleged teachings of the HiKIS reference.

Claim 33 has been rejected as being unpatentable over the Farrell '493 reference in view of the Farrell '129 reference. However, in traversing the limitations of claim 33 in the final rejection, the Examiner does not cite the Farrell '129 reference. Instead, the Examiner cites the HiKIS reference as disclosing those limitations of claim 33 that the Examiner admits are missing from the Farrell '493 reference.

In the absence of conditions such as misjoinder or fundamental defects in the application (conditions which do not exist here), 37 C.F.R. §1.104(b) requires that the "examiner's action will be complete as to all matters". Here, the Examiner's action is not complete as to all matters in that it is deficient on its face, in not citing a teaching or suggestion in the Farrell '129 reference for a claim limitation that admittedly is not taught or suggested by the Farrell '493 reference. Appellants thus contend that the Examiner has not established a valid *prima facie* case of obviousness, and the rejection of claim 33 is improper at least for this reason.

2. The rejection of dependent claim 33 is improper for the same reasons that render the rejection of its base claim 29 improper.

“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.” (35 U.S.C. §112, paragraph 4.)

Claim 33 depends from base claim 29, which was rejected under 102(e) based solely on the Farrell ‘493 reference. The Farrell ‘129 reference was not cited in the rejection of claim 29.

Appellants have presented heretofore the reasons why the rejection of base claim 29 is improper. Because the rejection of base claim 29 is improper, the rejection of its dependent claim 33 is also improper for at least the same reasons.

**I. Claim 38 was improperly rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,266,493 to Farrell et al. (“Farrell ‘493”) in view of U.S. patent 5,383,129 to Farrell et al. (“Farrell ‘129”).**

1. The rejection of dependent claim 38 is improper for the same reasons that render the rejection of its base claim 29 improper.

“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.” (35 U.S.C. §112, paragraph 4.)

Claim 38 depends from base claim 29, which was rejected under 102(e) based on the Farrell ‘493 reference. The Farrell ‘129 reference was not cited in the rejection of claim 29.

Appellants have presented heretofore the reasons why the rejection of base claim 29 is improper. Because the rejection of base claim 29 is improper, the rejection of its dependent claim 38 is also improper for at least the same reasons.

2. There is no suggestion or motivation to modify or combine reference teachings in that combining in the teachings of the Farrell ‘493 reference does not improve the estimation capability of the Farrell ‘129 reference.

The Examiner states that the motivation for combining the Farrell ‘129 and Farrell ‘493

references is “to improve the capability of cost estimation for networked machines” (Final Office Action, p.15-16).

For similar reasons as have been previously argued with regard to claim 29, Appellants contend that no such improvement in estimation capability would result from combining the references. Accordingly, the stated motivation is merely a conclusory statement that is too vague and inaccurate to ascertain a motivation for validly combining the references. Any motivation to combine impermissibly uses the Appellant’s disclosure as a blueprint or in hindsight.

## **VIII. CONCLUSION**

Appellants contend that claims 29-32 and 34-37 were improperly rejected because the applied reference does not disclose all of Appellants’ claim limitations.

Appellants contend that claims 1-14, 21-28, 33, and 38 were improperly rejected because the applied references, alone or in combination, do not teach or suggest all of Appellants’ claim limitations, and there is no reasonable expectation of success in combining the references.

Appellants contend that the rejection of claims 3-5, 23-25, 27-28, and 33 were further improperly rejected because the rejection is deficient on its face.

Each of these reasons alone distinguishes Appellants’ claims from the cited reference or references, and renders Appellants’ claims patentable in light of the cited reference or references.

Overruling of the Examiner’s rejections of claims 1-14 and 21-38 is respectfully requested.

**AUTHORIZATION TO PAY AND PETITION  
FOR THE ACCEPTANCE OF ANY NECESSARY FEES**

If any charges or fees must be paid in connection with the foregoing communication (including but not limited to the payment of an extension fee or issue fees), or if any overpayment is to be refunded in connection with the above-identified application, any such charges or fees, or any such overpayment, may be respectively paid out of, or into, the Deposit Account No. 08-2025 of Hewlett-Packard Company. If any such payment also requires Petition or Extension Request, please construe this authorization to pay as the necessary Petition or Request which is required to accompany the payment.

Respectfully submitted,



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## **IX. CLAIMS APPENDIX**

1. A method for estimating ink usage of a print job, comprising:  
connecting a computer peripheral device to a host computer having predefined information relating to the peripheral device; and  
offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device, before the print job is performed.
2. The method of claim 1, wherein the host computer is linked to a generic printer driver located on the host computer.
3. The method of claim 2, wherein the host computer is linked to a remote printer driver in a server system.
4. The method of claim 3, wherein the server supplies information pertaining to a number of instrumented drivers and printers to the host computer.
5. The method of claim 3, wherein the remote server is linked to the host computer via at least one of the Internet or a local intranet.
6. The method of claim 1, further comprising determining printing parameters for choosing a print option that best fits budgetary and printing requirements of the print job.
7. The method of claim 6, wherein the printing parameters includes at least one of print quantity, print quality, print type and paper type.
8. The method of claim 6, wherein the printing parameters are ascertained by a remote

printer driver and forwarded to a server.

9. The method of claim 8, wherein the printing parameters are incorporated by the server in data files to be used by various combinations of instrumented drivers and printers located on the server and shared by other printers connected to the server.

10. A method for analyzing ink usage for a printer, comprising:  
communicating a type of ink cartridge and ink reservoir system to a host computer as part of a print job submission;  
estimating the ink to be used in a print job based on predefined printing requirements;  
and  
determining the number of print swaths and pages the ink cartridge can complete based on ink available in the ink reservoir system.

11. The method of claim 10, further comprising relaying to the determined information to a user.

12. The method of claim 11, further comprising providing the user with a plurality of options, including allowing the print job to proceed, choosing an alternative printing system, and ordering ink consumables for the printer.

13. The method of claim 12, further comprising offering the user upgrade options, including ordering a generic stand alone printer driver and a server printer driver.

14. The method of claim 11, further comprising providing the user with a hyperlink via the Internet to a supplier of the printer for automatic ordering of the ink consumables.

21. An ink usage monitoring system for estimating ink usage of a print job, comprising:

means for connecting a computer peripheral device to a host computer having predefined information relating to the peripheral device; and

means for offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device, before the print job is performed.

22. The ink usage monitoring system of claim 21, wherein the host computer is linked to a generic printer driver located on the host computer.

23. The ink usage monitoring system of claim 22, wherein the host computer is linked to a remote printer driver in a server system.

24. The ink usage monitoring system of claim 23, wherein the server supplies information pertaining to a number of instrumented drivers and printers to the host computer.

25. The ink usage monitoring system of claim 23, wherein the remote server is linked to the host computer via at least one of the Internet or a local intranet.

26. The ink usage monitoring system of claim 21, further comprising means for determining printing parameters for choosing a print option that best fits budgetary and printing requirements of the print job.

27. The method of claim 1, comprising:  
selecting one of the plurality of different printers and sending the print job to the selected printer.

28. The method of claim 1, wherein the peripheral device and at least some others of the plurality of different printers are located at different network nodes.

29. A method for estimating consumables requirements for a print job, comprising:  
providing printer parameters indicative of resources of a predetermined printer  
including an available amount of consumables;  
originating the print job at a first computer at a first network node;  
communicating the print job to a second computer at a second network node;  
at the second computer, analyzing the print job to determine print job parameters that  
affect a required amount of the consumables;  
based on the print job parameters, estimating at the second computer the required  
amount of the consumables required to print the print job;  
based on the printer parameters and the required amount of the consumables, making  
a determination at the second computer whether sufficient consumables exist to print the print  
job; and  
communicating the determination from the second computer to the first computer.
30. The method of claim 29, wherein the printer parameters are indicative of an ink  
type, and an ink cartridge or ink reservoir type installed in the predetermined printer.
31. The method of claim 30, wherein the printer parameters are further indicative of a  
printhead temperature of the predetermined printer.
32. The method of claim 31, wherein the printhead temperature affects ink usage, the  
estimating including adjusting the required amount of the consumables based on the printhead  
temperature.
33. The method of claim 29, wherein the printer parameters include an identification  
number indicative of a particular consumable item, the identification number queryable to  
determine if the particular consumable item is replaced.
34. The method of claim 29, wherein the print job parameters are indicative of an ink

type, a print media type, a number of pages to be printed, and a print quality.

35. The method of claim 29, comprising:

sending the print job from the first computer to the predetermined printer.

36. The method of claim 29, comprising:

identifying at the second computer at least one alternative printer having sufficient consumables to print the print job, and communicating the identity of the at least one alternative printer to the first computer.

37. The method of claim 36, comprising:

at the first computer, selecting one of the alternative printers and sending the print job from the first computer to the alternative printer.

38. The method of claim 29, comprising:

based on the print job parameters, estimating at the second computer a cost of the consumables required to print the print job, and communicating the cost to the first computer.

## **X. EVIDENCE APPENDIX**

None

## **XI. RELATED PROCEEDINGS APPENDIX**

None